

A signal convertor for modulating or demodulating an input signal $x(t)$, comprising: a synthesizer for generating wideband mixing signals ϕ_1 and ϕ_2 , which vary irregularly over time, where $\phi_1 * \phi_2$ has significant power at the frequency of a local oscillator signal being emulated; a first mixer coupled to said synthesizer for mixing said input signal $x(t)$ with said mixing signal ϕ_1 to generate an output signal $x(t) \phi_1$; and a second mixer coupled to said synthesizer and to the output of said first mixer for mixing said signal $x(t) \phi_1$ with said mixing signal ϕ_2 to generate an output signal $x(t) \phi_1 \phi_2$.

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